

MISSOURI. Conservationist

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Take Time for an Outdoor Adventure

This issue of the *Conservationist* includes articles on two activities that I truly enjoy — camping and squirrel hunting. Reminiscing about past camping trips brought many memories to mind.

Dawn breaks early in the north country, and the sounds of a gentle breeze in the red pines and water lapping at the edge of the island rocks is a very good way to wake up during a camping trip. On this particular adventure in the late 1970s, my wife and I were newlyweds on a seven-day canoe trip with another newlywed couple exploring Quetico Provincial Park in Ontario, Canada. Spending seven days in the wilderness catching fish for breakfast, drinking water out of the lake, and seeing abundant wildlife is a good way to create fond memories. That trip resulted in some humorous memories, too. As you know, with any watercraft, there needs to be a captain and crew. During this particular adventure, my wife was positioned in the front of the canoe and I was in the back. Every time she happened to turn around and look at me, I had my paddle in the water steering the canoe in a straight line. As you might expect, lively discussions ensued about who was doing all the work propelling the canoe and who was along for the ride. She soon mastered paddling and we were smoothly gliding through the waters, enjoying the bald eagles and osprey flying overhead and all that nature had to offer. Another memory from that trip was waking up one morning, realizing a moose had visited during the night.

Another early camping trip on Lake Oahe in South Dakota involved fishing and water sports and included our first Weimaraner, Duchess. After a long day enjoying the outdoors, it was time to turn in with the expectation Duchess would sleep outside the tent. Duchess, being a Weimaraner and proud of her stubbornness, had no intention of sleeping outside the tent that night. The two-person tent we continue to use to this day has her scratch marks on the window netting reminding us of those adventures along Lake Oahe. Other family camping trips along the Atlantic coast, Black Hills of South Dakota, and on the shores of the Great Lakes hold special memories for our family. Even time spent out west on assignment to fight wildfires, where home was a tent, brings back special memories of camping in the great outdoors. One memorable experience was waking up every morning with the first view of the day being the morning sun reflecting off the snowcapped peak of Mount Hood.



All camping trips can and will provide many treasured and lasting outdoor memories. The memories of my family sitting around campfires discussing the day's events, stargazing, listening to the night noises, enjoying pocket dinners, and s'mores cooked over the open fire are special to me and are an important piece of my family's fabric of life. Adventures such as these can be part of your family's experiences, too. We Missourians are blessed with ample camping opportunities. Gravel bars along Missouri's clear water streams are one of many perfect settings for families and all outdoor enthusiasts to begin writing the chapters of their camping memories book. In the rapid pace of today's world, spending time outdoors amongst Missouri's many natural wonders will create special lifetime memories that will be reflected upon for many years to come. I challenge myself and encourage readers to make time for that next outdoor camping adventure. It will provide smiles, chuckles, and many other lasting memories.

One memory my wife and I look forward to creating is our first camping trip with our grandson, Philip, and his vizsla, Bea. Another chapter will be written to begin building those outdoor adventure memories with and for the next generation.

Tom Draper, deputy director

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by Scott Sudkamp, photographs by Noppadol Paothong

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by Max Alleger, photographs by David Stonner

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by Peg Craft and Heather Feeler

A family camping tradition that spans the ages

Cover: A gray squirrel enjoys a nut while sitting in a tree. Photograph by Noppadol Paothong.

📷 500mm lens • f/4 • 1/80 sec • ISO 400

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WHAT IS IT?

Our photographers have been busy exploring the intricacies of outdoor Missouri. See if you can guess this month's natural wonder. The answer is revealed on Page 8.



MARCH ISSUE

I loved the artwork in the March issue. The artist Jane Bick Mudd is so deserving of being featured for her beautiful paintings that truly do what she set out to do — capture the personality of the trees [*The Mighty Ones*; Page 16].

Her painting of a blue ash tree in Boonville used on the front cover made me pick up the magazine over and over. It's a keeper and the best *Conservationist* ever!

Lynn Cornell, Lee's Summit

The covers on this magazine are always outstanding, but this March one is so beautiful I just had to write and compliment the artist.

Betty L. Eads, Trenton

The March cover is so beautiful. Thank you so much for your magazines. What a wealth of educational information, photography, and

artwork. I share the magazines with my 6-year-old grandson. He loves both the *Missouri Conservationist* and *Xplor*.

Mrs. William Adams, Richmond

Missouri Conservationist, you have outdone yourself. The March issue is amazing. It features William Woods art professor and artist extraordinaire Jane Mudd's interpretations of my absolute favorite tree in the world — my Champion Bur Oak in McBaine's Missouri River bottoms, along with other champion trees in the state. Art and trees — how great is that?

Crystal Payne, Columbia

Luscious is the word I would use to describe the cover of the March issue of the *Missouri Conservationist*. Thank you for featuring the magnificent champion trees and the paintings of these beauties by the talented artist Jane Bick Mudd. Also,

the article *Conservation en Plein Air* [Page 24] was both enlightening and inspiring. It is wonderful to see the visual arts featured in the *Conservationist*.

Carol Bramon, Mexico

THE MIGHTY ONES

Jane Bick Mudd's beautiful painting of the ash tree made a strikingly different cover for the March *Conservationist*.

Her paintings to illustrate the champion Missouri trees in the *The Mighty Ones* [Page 16] offered fresh personal views of five of the champion trees. The layout of the pages using almost a full-page for each painting was appropriate for the "big" subjects.

Carl Hermann, Chesterfield

What a surprise and so refreshing to see Missouri's champion trees [March; Page 16] through the eyes of plein air artists! Inspires me to get back to painting.

Margaret Hogan, Spickard

EN PLEIN AIR

I enjoyed the story, pictures, and paintings in *Conservation en Plein Air* [March; Page 24]. I became acquainted with plein air painting when I attended a show at the Ashby Hodge Gallery of American Art on the campus of Central Methodist University in Fayette, Missouri, in 2011. The artist was Billyo O'Donnell, who painted a scene from every county in Missouri. Thank you for highlighting this unique genre of art.

Susan Devaney, Hallsville

This March issue is a keeper. The painting of Missouri scenery is inspiring and uplifting. All the paintings are expressing the feelings of the artists, in some ways better than a photograph.

Al Hempy, St. Charles

PLEASED SUBSCRIBER

I love your magazine! I anxiously await my issue every month. The photographs are so vivid of the various wildlife, flora, and fauna. I enjoy learning about various conservation areas in the state. I feel your magazine is equivalent to, if not better than, the *National Geographic* magazine for the quality of your photos.

Kathy Anderson, Neosho



Reader Photo

THE EARLY BIRD

Becky Swearingen of Springfield captured this photo of a yellow-crowned night-heron about to enjoy a crayfish dinner at Shell-Osage Conservation Area. Swearingen, who is a Missouri Master Naturalist with the Springfield Plateau Chapter, visits conservation areas about twice a week to take photographs. "Spending long periods of time at conservation areas has allowed me to capture some fascinating things, both with my camera and for my memory," said Swearingen. "This heron was a rather serendipitous sighting. I had spent a few hours photographing other birds and wildlife and was doing a last swing through the waterfowl refuge. This guy was hunting about 20 feet from the road. I was so happy when he caught that crawfish and I caught it on camera."



DEPARTMENT HEADQUARTERS

Phone: 573-751-4115

Address: PO Box 180,
Jefferson City 65102-0180

REGIONAL OFFICES

Southeast/Cape Girardeau: 573-290-5730

Central/Columbia: 573-815-7900

Kansas City: 816-622-0900

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Southwest/Springfield: 417-895-6880

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SUBSCRIPTIONS

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ASK MDC

Phone: 573-522-4115, ext. 3848

Address: Ask MDC, PO Box 180,
Jefferson City 65102-0180

Email: AskMDC@mdc.mo.gov

EDITORIAL COMMENTS

Phone: 573-522-4115, ext. 3847

Address: Magazine Editor, PO Box 180,
Jefferson City 65102-0180

Email: Magazine@mdc.mo.gov

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Flickr: [flickr.com/groups/mdc-readerphotos-2016/](https://www.flickr.com/groups/mdc-readerphotos-2016/)

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Editor Angie Daly Morfeld

Art Director Cliff White

Associate Editor Bonnie Chasteen

Staff Writer Heather Feeler

Staff Writer Kristie Hilgedick

Photographer Noppadol Paothong

Photographer David Stonner

Designer Stephanie Thurber

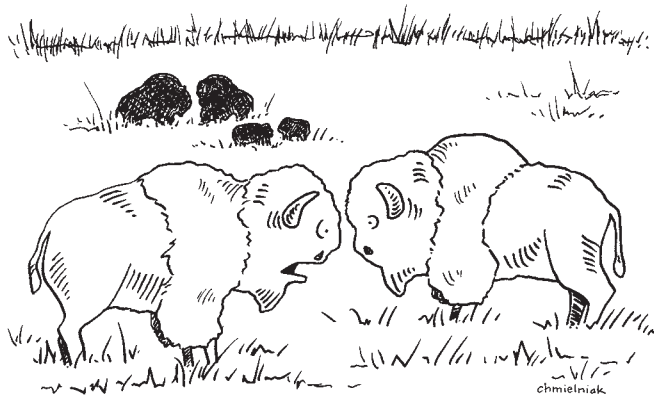
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"I'd like to get a cell phone, but I can't afford the roaming fees."

Agent Notes

Smallmouth Bass Fishing: An Ozark Tradition

THROUGHOUT THE RIVERS and streams of the Ozarks and portions of southern Missouri, smallmouth bass have been one of the most sought-after sport fish species. Their relentless fight to get off your hook is just one reason anglers enjoy pursuing this hard fighting fish.

It's a great time to try your hand at smallmouth bass fishing. If you are going to try catch-and-release, here are a few tips:

- Use artificial lures. Fish that hit artificial bait have a higher survival rate because they are less likely to be hooked deeply enough to damage vital organs.
 - Minimize the amount of time that you play a fish.
 - Return smallmouth bass you don't intend to keep to the water unharmed immediately.
 - Avoid handling the fish excessively — the mucous covering the fish's body prevents infection.
- For more information on fish handling and release, visit on.mo.gov/1Xtqu9g.

It is important to adhere to the *Wildlife Code of Missouri* when fishing. Smallmouth bass are considered black bass in the *Code*, so there is a season on this particular species. The season for smallmouth bass in most streams south of the Missouri River opens May 28, 2016, and concludes on the last day of February. It is always important to know the regulations associated with each particular body of water or stream before going fishing.

Jarad Milligan is the conservation agent for Laclede County. If you would like to contact the agent for your county, phone your regional conservation office listed on Page 3.

HUNTING & FISHING CALENDAR

FISHING	OPEN	CLOSE
Black Bass		
Impounded waters and most streams north of the Missouri River	All year	None
Most streams south of the Missouri River	05/28/16	02/28/17
Bullfrogs and Green Frogs	06/30/16 * at sunset	10/31/16
Nongame Fish Giggling		
Impounded Waters		
*sunrise to sunset	02/01/16	09/14/16
*sunrise to midnight	09/15/16	01/31/17
Streams	09/15/16	01/31/17
Paddlefish on the Mississippi River	03/15/16 09/15/16	05/15/16 12/15/16
Trout Parks		
Catch-and-Keep	03/01/16	10/31/16
Catch-and-Release	11/11/16	02/13/17
HUNTING	OPEN	CLOSE
Coyote (restrictions apply during April, spring turkey season, and firearms deer season)	All year	None
Deer		
Archery	09/15/16 11/23/16	11/11/16 01/15/17
Firearms		
Early Youth Portion	10/29/16	10/30/16
November Portion	11/12/16	11/22/16
Late Youth Portion	11/25/16	11/27/16
Antlerless Portion (open areas only)	12/02/16	12/04/16
Alternative Methods Portion	12/24/16	01/03/17
Groundhog (woodchuck)	05/09/16	12/15/16
Pheasant		
Youth	10/29/16	10/30/16
Regular	11/01/16	01/15/17
Quail		
Youth	10/29/16	10/30/16
Regular	11/01/16	01/15/17
Rabbit	10/01/16	02/15/17
Squirrel	05/28/16	02/15/17
Turkey		
Archery	09/15/16 11/23/16	11/11/16 01/15/17
Firearms		
Spring	04/18/16	05/08/16
Fall	10/01/16	10/31/16
Waterfowl	see the <i>Waterfowl Hunting Digest</i> or on.mo.gov/1DChcmi	

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, *the Fall Deer and Turkey Hunting Regulations and Information*, *the Waterfowl Hunting Digest*, and *the Migratory Bird Hunting Digest*. For more information, visit on.mo.gov/1Ulcnlw or permit vendors.

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Wood frog

Is this a wood frog? A similar frog was found in the Ironton area recently.

Yes. The prominent white line along the upper lip and distinctive dark-brown mask extending from the snout to the tympanum (ear drums) are two clues suggesting this is a wood frog (*Lithobates sylvaticus*).

In 1973, the frog was classified as an endangered species in Missouri until subsequent populations were found in the eastern and southwestern sections of the state. Although the species is more widespread in the forested region of Missouri, it remains a species of concern.

Wood frogs require warm late-winter or early spring rains and an air temperature of at least 50 degrees to

stimulate breeding. Adult frogs move to a breeding pool — typically a small, fishless woodland pond or ephemeral pool — as soon as the sun is down, and they normally vocalize until midnight. The call of the male wood frog is a rapid, hoarse “waaduck,” not unlike the noise of a quacking duck.

I caught this fish at Lake Ozark this weekend. Is it a striped or white bass?

It appears to be a hybrid striped bass, also known as a white bass crossed with a striped bass. These fish are sometimes referred to as “wipers,” or “whiterock bass,” and they play an interesting role in how the Missouri

Department of Conservation manages fishing stock.

Because these fish are sterile, they primarily are added to the state’s reservoirs to manage gizzard shad. Although gizzard shad are not typically eaten — at least not by humans — they are an important food source for largemouth bass. However, gizzard shad sometimes grow too large to be eaten by other sport fish and compete with other species for food, habitat, and other resources. By introducing a larger predator fish — such as this hybrid striped bass — gizzard shad can be managed, while providing anglers with another exciting fish to catch.

“And we don’t have to worry about the hybrids reproducing and becoming overpopulated,” said Andrew Branson, Department fisheries program specialist.

Hybrids superficially resemble white bass, but grow larger, exceeding a weight of 5 pounds. To learn more, visit on.mo.gov/1RP3dhR.

What causes a chigger’s itchy bite?

Contrary to conventional wisdom, chiggers do not burrow into the skin or suck blood. Instead, they pierce the skin with their mouth and inject a digestive enzyme. This fluid dissolves the tissues of the host, which are then sucked up by the larval mite as food. Within a few hours, tissue around the feeding area solidifies into a hardened tube, called a stylostome. The chigger remains attached to the stylostome, using it like a person drinking from a straw. Itching usually starts in a few hours. For more information, visit extension.missouri.edu/p/g7398.



Hybrid striped bass

NEWS & EVENTS

by Heather Feeler



Male Indigo bunting



Female indigo bunting



Indigo bunting range map

sun is not shining. They sing their bouncy song for hours while perched high in trees or on power lines. The brown, cryptic females build open-cup nests and incubate eggs below shrubbery or low sapplings. Like many birds, the darker colored female buntings are difficult to see on a nest, which offers them some protection from predators.

Indigo buntings breed in the eastern and southwestern United States and migrate to Central America in winter. Some individuals migrate over 2,000 miles each spring and fall. Buntings are dauntless singers through the heat of summer. Visit a conservation area near you (mdc.mo.gov/atlas) with shrubby cover or sites managed for savanna and woodland habitats, and listen for their upbeat song, which you can hear at bit.ly/1URbbYz.

Celebrating Migratory Birds

The year 2016 marks the centennial of the Migratory Bird Treaty, signed in 1916 by the United States and Great Britain (on behalf of Canada).

After 100 years of market hunting and unregulated use of migratory birds for their meat, feathers, and eggs, many bird populations had plummeted by the early 20th century. The federal government took action to stop further losses by signing the Migratory Bird Treaty. It specifically prohibits the hunting, killing, capturing, possession, sale, transportation, and exportation of birds, eggs, feathers, and nests. Hunting seasons were added later to help maintain healthy bird populations. The Migratory Bird Treaty — and three other similar treaties with Mexico, Russia,

Meet a Migrator! Indigo Bunting (*Passerina cyanea*)

The vibrantly colored indigo bunting returns to Missouri this month, singing and chipping away through most of the summer. The sparrow-sized bird is a member of the cardinal family, which includes the scarlet and summer tanagers, rose-breasted grosbeak, and dickcissel. It frequents

habitats where shrubs are in good supply — in a forest clearing, along rural roads, and in woodlands, savanna, and old fields.

The indigo color of the male bunting becomes visible in sunlight, shining as brightly as neon lights, but often appears dark or black when the

INDIGO BUNTINGS: NOPPADOL PAOTHONG; INDIGO BUNTING RANGE MAP: BIRDS OF NORTH AMERICA ONLINE; CORNELL LAB OF ORNITHOLOGY

and Japan — form the cornerstones of migratory bird conservation across international borders.

The Treaty not only protects populations of migratory birds like the indigo bunting and many nonmigratory permanent resident birds like the northern cardinal, it also enhances our lives by ensuring that populations of diverse, beautiful birds are sustained for generations to come. The Department manages different natural communities across the state to provide stopover foraging habitats for these birds along their annual migration routes. For more information on the Migratory Bird Treaty Centennial, visit fws.gov/birds/MBTreaty100.

Talking Feral Hogs

Feral hogs and the damage they cause to native wildlife and private, public, and agricultural lands continue to be a hot topic in Missouri. The Department recently released its first-quarter 2016 feral hog trapping numbers. The first three months of the year yielded a total of 955 hogs trapped by the Department, partner agencies, and private landowners, which is a 23-percent increase compared to the first quarter of 2015.

"We see this as very successful, although there are more hogs where those came from," said Department Wildlife Management Coordinator Alan Leary. "The key to eradicating these destructive, invasive pests is cooperation with private landowners and partners in efforts to report hog sightings, continue trapping, and deter hog hunting."

Leary, who leads the Department's feral hog eradication efforts, said while hunting is a very effective tool for managing populations of wildlife, feral hogs are not wildlife and the Department will not manage them. The goal is to eradicate them. He added that killing feral hogs for sport hinders efforts to eradicate them for a few reasons.

"Some hunters intentionally release feral hogs in new areas to establish populations to hunt," Leary said. "And hunters usually only shoot one or two hogs out of a group, while the rest scatter across the landscape and become more difficult to catch. Additionally, feral hogs have such a high reproductive rate that an entire group, called a sounder, must be removed at the same time for eradication efforts to be successful."

Because of that high reproductive rate, more than 70 percent of a feral hog population has to be removed annually to decrease populations. Feral hogs are a serious threat to fish, forests, and wildlife as well as to agricultural resources. Feral hogs have expanded their range in the U.S. from 17 to 38 states over the past 30 years. Feral hogs are also known to carry diseases, such as swine brucellosis, pseudorabies, trichinosis, and leptospirosis, which are a threat to Missouri agriculture and human health.

The Missouri Conservation Commission approved recommended changes to the *Wildlife Code of Missouri* in January that would

prohibit taking feral hogs on lands owned, leased, or managed by the Department. The next step in the rulemaking process includes a 30-day public comment period on the proposed regulation changes, which will run from April 16 through May 15. Public comments can be submitted by mail to the Missouri Department of Conservation, Regulations Committee, PO Box 180, Jefferson City, Missouri 65102-0180 or online at on.mo.gov/1QqDR6Z. Following final Conservation Commission consideration of citizen input and staff recommendations this summer, the anticipated effective date of the regulation changes will be Sept. 30, 2016.



CONSERVATION COMMISSION ACTIONS

The March Commission meeting featured presentations and discussions regarding the Northeast Missouri Wild Turkey Research Project, the Missouri Managed Woods Program, Strategic Guidance for Northern Bobwhite Recovery 2015–2025, major construction projects status report, vendor online permit sales implementation, monthly financial summary, and information technology projects status report. A summary of actions taken during the March 10–11 meeting for the benefit and protection of fish, forests, and wildlife and the citizens who enjoy them includes:

- » **Recognized** Laclede County Conservation Agent Jarad Milligan for receiving the National Wild Turkey Federation's Missouri Wildlife Officer of the Year Award.
- » **Recognized** Private Land Services Division Chief Bill White for his recent Faces of Conservation Award from Quail Forever for his efforts to conserve wildlife habitat and support the overall conservation mission of Quail Forever.
- » **Approved** final recommendations of the Regulations Committee to limit the spread of Chronic Wasting Disease to other portions of the state.
- » **Approved** a series of recommendations by the Regulations Committee to clarify *Wildlife Code* verbiage regarding feral hogs.
- » **Approved** a series of recommendations by the Regulations Committee for regulation changes identified during the annual review of the *Wildlife Code*.
- » **Approved** the advertisement and sale of 762,188 board feet of timber located on 298 acres of Compartment 2, Fox Valley Conservation Area (CA) in Clark County.
- » **Approved** entering into a contract for the construction of the Hunnewell Lake CA Kettle Replacement Phases II and III project located in Shelby County. Federal funds are available to cover 75 percent of the total project cost.
- » **Approved** the purchase of 225.91 acres in Franklin County as an addition to Little Indian Creek CA.

The next Conservation Commission meeting is June 23–24. For more information, visit on.mo.gov/1li700p or call your regional Conservation office (phone numbers on Page 3).

(continued from Page 7)

Record-Breaking Catch for Missouri Angler

Travis Cardona of Hillsboro made the state record books this spring when he shot a giant black buffalo at Duck Creek Conservation Area using a bow and arrow. The new alternative-method record black buffalo, taken by Cardona on March 14, weighed 74 pounds.

"Believe it or not, once I shot the giant, I didn't know it was that big of a fish until it started swimming back to the boat," Cardona said. "Believe you me, after it swam towards the boat, the fight was on."

The new black buffalo record broke the previous alternative-method state record of 59 pounds, 8 ounces taken on the same body of water three days prior by David Burle of Bloomsdale.

"The month of March was full of potential record-breaking fish caught throughout the state," said Department Fisheries Programs Specialist Andrew Branson. "This just goes to show you that conservation makes Missouri a great place to fish."

Missouri state-record fish are recognized in two categories: pole-and-line and alternative methods. Bowfishing is considered an alternative method and consists of a bow or crossbow that

shoots arrows attached to a string so that the fish can be retrieved after they're pierced. Other alternative methods include throwlines, trotlines, limb lines, bank lines, jug lines, spearfishing, snagging, snaring, gigging, grabbing, and atlatl. For a full list of state records, go to mdc.mo.gov/fishing/state-record-fish.

Free Fishing Days Set for June 11–12

Get hooked on fishing with the Department's Free Fishing Days June 11–12. During Free Fishing Days, anyone can fish in the Show-Me State without purchasing a fishing permit, trout permit, or trout park daily tag. Normal regulations remain in effect, such as limits on size and number of fish an angler can keep. Special permits may still be required at some county, city, or private fishing areas, and trespass laws remain in effect on private property.

Conservation makes Missouri a great place to fish, and Free Fishing Days encourages people to sample the state's abundant fishing opportunities. Missouri is blessed with more than a million acres of surface water, and most of it provides great fishing. More than 200 different fish species are found in Missouri, with 20 of them being game fish for the state's more than 1.1 million anglers.

For information on Missouri fishing regulations, permit requirements, fish identification, and more, get a copy of the Department's 2016 *Summary of Missouri Fishing Regulations* where permits are sold, at regional offices, and online at on.mo.gov/1LwnqRA. Anglers can also get weekly fishing reports, annual prospects, and more using the Department's Find MO Fish app available at on.mo.gov/1pC2hCh.



WHAT IS IT?

Monarch Caterpillar | Larva

Before a monarch (*Danaus plexippus*) emerges from its chrysalis as a beautiful butterfly, it starts as a tiny green egg attached to the underside of a leaf, usually on a milkweed plant. After about three days, it hatches into a tiny caterpillar. The monarch caterpillar begins eating plant leaves, but only those from the milkweed family. During the next 10 days, the caterpillar will grow bigger and develop beautiful yellow, black, and white bands on its body. Between feedings, it molts, or sheds, skin as it grows. Once it has shed its smaller skin, it leaves behind a crumpled mass of dark material called molt. When the caterpillar is about 2 inches long, it will stop eating and start looking for a place to make its chrysalis and begin the next stage of life. —photograph by Noppadol Paothong

Keeping Tabs on Turkey Research

The Missouri Department of Conservation recently completed its third winter of a five-year research project studying wild turkey survival and nesting success in northern Missouri. Information from the project, along with harvest data and hunter input, helps Department biologists manage Missouri's wild turkey population — now and into the future.

The Department is conducting the research project in partnership with the University of Missouri, the University of Washington, and the National Wild Turkey Federation (NUTF).



Department employees band a turkey as part of a research project.

Funding for the project comes from the Department, as well as grants from the U.S. Fish and Wildlife Service's Wildlife Restoration Program and the George Clark Missouri State Chapter of the NWTf.

As part of the research project, wild turkeys are captured by firing a rocket-net over the birds, then biologists quickly band them and fit them with radio transmitters, releasing them a few minutes later at the same location where they were captured. Researchers then use radio telemetry to track turkeys throughout the year.

"Having updated information from the field is important to our wild turkey management program," said Jason Isabelle, the Department's statewide turkey biologist and lead on the research project. "With this information, we will work with our partners to develop population models that will be an important part of how the Conservation Department monitors turkey populations in the future."

Information from the project will also be used to evaluate hunting regulations. Results of the project, thus far, indicate that hunters are removing a rather small percentage of the turkey population.

"During the first two years of the project, hunters harvested less than 20 percent of the adult gobblers that were being radio-tracked during the spring season," said Isabelle. "These are some of the lowest harvest rates that have been reported, which has important implications for our hunting regulations."

Researchers are currently tracking about 200 turkeys. As the nesting season approaches, hens (female turkeys) will be tracked intensively to

provide information about nesting success. Researchers will also track gobblers (male turkeys) intensively during the upcoming spring hunting season. Hunters that harvest a banded turkey are urged to call the toll-free phone number inscribed on the band. This information is important to the success of the project.

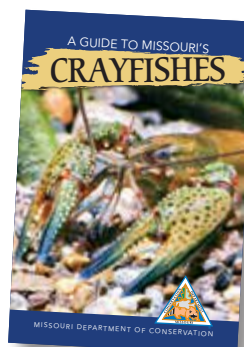
Get to Know Missouri's Crayfishes

No matter what you call them — crayfish, crawfish, crawdads, or even mud bugs — these colorful, quirky, and fascinating animals are one of the largest and most recognized invertebrates in Missouri's lakes, streams, and wetlands. They're also important to our landscape

and way of life. Missouri has at least 36 species of crayfish and, while some species are abundant in the state, Department scientists have identified 20 types of Missouri crayfish as species of conservation concern.

The Department recently updated and thoroughly revised its *Guide to Missouri's Crayfishes* publication. This guide is designed to help general readers discover, appreciate, and conserve crayfish found in Missouri. Organized by habitat,

the book features detailed photos, illustrations, distribution maps, and easy-to-scan descriptions so readers can quickly identify and learn about each species, and where they are most likely to find them. This free publication is available at local nature centers, Department regional offices, and online at mdcnatureshop.com.



DID YOU KNOW?

Conservation makes Missouri a great place to fish

Find Great Fishing Info Online

Before you wet a line, go online to browse Missouri's fishing seasons and regulations, buy permits, find prime fishing spots, and get other info to make the most of every fishing trip.

- » Get your fishing permit anytime you need it at on.mo.gov/20TydxK. You can filter permits by species or type.
- » Explore the best places to fish near you or around the state at on.mo.gov/1U16ZR0. There you can investigate public fishing areas, browse trout areas, check out the fishing reports, view the boat ramp and fish attractors maps, and download the free Find MO Fish app.
- » Check fishing seasons by date or species at on.mo.gov/1oFAQaX.
- » Be sure and brush up on the regulations for the kinds of fish you like to catch and the areas you want to fish at on.mo.gov/1Z4mPRw.
- » Browse almost 200 Missouri live-bait dealers at on.mo.gov/1Ot7Urg. These folks sell only approved species that help you avoid spreading harmful aquatic animals, such as rusty crayfish and Asian carp minnows.
- » Not sure what you caught or if it's legal to keep it? Identify a variety of Missouri game and nongame fish, as well as their regulations, seasons and hours, permits, and limits at on.mo.gov/1QedvqQ.
- » Learn more about what we're doing and what you can do to protect Missouri's great fishing from threats like zebra mussels, didymo, and invasive crayfish at on.mo.gov/1WH37IJ. You can also find wader-washing stations and browse fish-management plans there.





Fox squirrel

Squirrel hunting is a great introduction to hunting and teaches kids valuable skills

Start 'Em on SQUIRRELS

By Scott Sudkamp | Photographs by Noppadol Paothong



Gray squirrel



→ Scanning the treetops for movement, I slowly eased down the dry creek bed. Besides growing good mast like oak, walnut, and pecan trees, creeks also provide a hunter the chance to move quietly, since flood events periodically remove noisy dead leaves and the moist soil promotes quick decay of those that remain. I came to a stop behind a giant pin oak as I finally spotted what I was looking for — the unnatural “bounce” of a limb springing back and forth from the weight of a squirrel using it to travel through the tree as it sought a shell-bark hickory nut. But seeing a limb move and finding the source of that movement among the full foliage of the late summer woods are two separate matters, and it was several minutes before I finally spotted the gray squirrel as he stopped on a limb and began cutting the still-green husk off the nut.

I braced the rifle against the tree in front of me, settled the crosshairs, and squeezed the trigger. At the crack of the shot, the squirrel tumbled down through the canopy, and for a moment the woods were still. Then, the unmistakable sound of claws on bark, and another gray paused on the trunk, tail twitching as it searched for the source of the noise. This one, too, soon lay on the forest floor, and I had the makings of a fine meal.

How long has it been since you enjoyed an experience like the one just described? Chances are, if you're 35 or older, this is the kind of hunting you cut your teeth on. Years ago, most young hunters started out chasing squirrels and rabbits, usually spending a few seasons on small game pursuits before moving on to hunt deer and turkey. Tracking a running squirrel or rabbit with a 20-gauge shotgun honed our skills, which would pay

off as we began wingshooting ducks, geese, quail, and pheasants.

Today, I would wager more kids begin hunting by sitting in a deer blind with a .243. While I'm certainly all in favor of folks going afield hunting for any legal game, I think there are a lot of good reasons for new hunters to start with squirrels.

OPPORTUNITY ABOUNDS

From 1967–1983, Missouri squirrel hunters harvested between 2 and 3 million bushytails annually. Today, the Department puts that number closer to a half million. As deer and turkey numbers grew over the past several decades, several things have happened. Many seasoned hunters found big game hunting more exciting or more challenging. Meanwhile, many small game species, while still abundant, don't get much attention. When was the last time you watched a show about squirrel hunting or bought a bag of food plot seed to grow bigger rabbits?

A recent survey of former hunters asked them to identify why they stopped hunting. Two of the top reasons were a lack of time and a lack of places to go — two areas that should not be of concern to a squirrel hunter.



Squirrel hunting introduces kids to important skills such as firearms safety, marksmanship, and woodsmanship.



Hunters can have a good squirrel hunt in as little as an hour or two, and access opportunities abound in Missouri, with public forest within an easy drive of just about anywhere in the state.

If you prefer to hunt private land, just about every little woodlot harbors a few squirrels, and getting permission to hunt them is much easier than getting permission to hunt deer or turkey.

Most squirrel hunters enjoy solitude when they're afield. Do the deer hunters in November cut into your solitude? Chances are if you take your .22 out a month earlier, you could enjoy those same woods all to yourself. The point is many small game species are abundant and often underutilized.

LOTS OF ACTION, LONG SEASONS, AND LIBERAL LIMITS

Ask almost any parent and they'll tell you that today's young people are all about fast-paced action. This is important to consider as we start young people out hunting. It's hard for many of them to sit quietly for hours in a tree stand. While adults might consider it relaxing and peaceful, an 11-year-old may have another word for it — boring.

Luckily, a squirrel hunt will often produce a lot of action, especially once a squirrel starts concentrating on a particular food. Also, squirrel hunting doesn't usually require the stealth and silence that deer hunting does, so kids can move around more and often even talk quietly without too much worry about spooking game. If they get restless during a sit, a stalk through the woods offers the chance to stretch their legs and explore new places.

Squirrel season is also one of our longest. Hunters have about 8½ months to pursue fox and gray squirrels. And if a lengthy season weren't enough, bag limits for squirrels in Missouri are generous, allowing hunters to take 10 squirrels per day, with 20 in possession.



If you want to encourage some handicraft, check out our squirrel call on Page 15, or go online and search for homemade squirrel calls or squirrel cutters. These calls are easy enough for kids to make themselves, and using a call they've made on their own enhances their feeling of satisfaction.



SQUIRREL AND DUMPLINGS

Season squirrels with salt, pepper, garlic, and diced onion and pressure cook until the meat falls off the bone. Remove the meat from the bone and save the broth.

Dumplings ingredients:

- » 1 egg
- » ½ cup water or cooled broth
- » 1 teaspoon salt

Mix ingredients with enough flour to make a firm dough. Turn dough out onto a board and knead in flour until dough is stiff. Then roll out thin and leave for about one hour. Slice into either a diamond or noodle shape and drop into boiling broth.

Water may be added to the broth. Put squirrel meat in broth and simmer over low heat for at least 15 to 20 minutes before serving.



Squirrels provide abundant opportunity for young hunters. This year's squirrel season runs from May 28, 2016, to Feb. 15, 2017.

Squirrel hunting is a great introduction to hunting as it teaches kids valuable skills. Using a .22 rifle hones marksmanship and good shooting technique, but even if they miss, another opportunity will present itself. Squirrel hunting encourages hunters to learn their trees — what they look like, where they grow, and when they produce mast or fruit. Young hunters will quickly learn to use their senses, too — sight to spot movement or hearing to detect the sounds of claws on bark and teeth cutting through shells. Challenge young hunters to find a deer antler, a turkey feather, or a turtle shell. They'll find other cool treasures as well, and you can use these finds as a chance to teach them about wildlife and nature. Hunting along a creek might even provide a chance to look for arrowheads and talk about our ancestral ties to the pursuit of game.

Make your own SQUIRREL CALL

Materials and tools needed:

- » Popsicle sticks (half or whole)
- » Scotch tape (half-inch wide)
- » Plastic film (or paper)
- » Scissors



Notes:

If you use half-sticks, you'll need two per call — one for the top and one for the bottom.

If you use whole sticks, you'll need to break them in half. (Use the edge of a table.) Then, put the two rounded edges together and tape the ends with the broken edges in Step 1.

You can use paper between your sticks, but it will get soggy after a lot of use and won't work until it dries out again. Plastic film (like clear report covers) doesn't get soggy.

Directions:

- 1) Use 3 inches of tape and wrap all of it around one of your sticks about a quarter-inch from the end. Do this for both sticks.
- 2) With scissors, cut a thin strip of plastic film about the same length and width as one of your sticks. It doesn't have to be exact, but don't let it hang out over the edges.
- 3) Sandwich the film between your two sticks. Be sure the film is pinched between the layers of tape.
- 4) Use another 3 inches of tape and wrap all of it around both sticks to hold your call together.

Your squirrel call is finished! Hold the taped end and blow gently between the sticks. If you don't get a sound at first, try turning the call over. You might need to squeeze the very end of the call to spread the sticks a little bit. This will change your call's pitch and tone. Experiment and practice. You'll soon sound like the real thing.

As hunters, we often talk about the good old days and reminisce about hunts from days gone by. Hit the woods this year and you'll see that these days may not be old, but they're just as good. ▲

Scott Sudkamp has been with the Department since 2002, serving as a wildlife biologist, small game coordinator, and presently as a private land conservationist for Vernon and Bates counties. He enjoys all types of hunting and teaching both adults and kids about our amazing wildlife resources and how to manage and care for the land.

In spring and summer, Wah'Kon-Tah
Prairie managers use carefully
controlled grazing with local cattle
to improve the area's wildlife habitat.





Grazing *for* Conservation

Local cattle producers keep grasslands diverse and vibrant
with periodic grazing and prescribed fire

BY MAX ALLEGER | PHOTOGRAPHS BY DAVID STONNER

A STOCK TRAILER STOPS AT TALBOT CONSERVATION Area. The manager opens the gate, and the driver unloads 30 head of cattle into a field of green grass. That's right — cattle. On a Missouri Department of Conservation grassland area.

The value of grazing for conservation may not be clear at first glance. Some people equate grazing with environmental problems, and examples of poorly managed grazing abound. Nevertheless, well-managed grazing creates cycles of disturbance and regrowth that can dramatically improve grassland habitat, and it may be essential to the healthy function of the grassland community as a whole. This is why the Department of Conservation partners with livestock producers to graze some areas that it owns or manages. It's also why the Department has launched a long-term study to explore the effects of conservation grazing on native grassland communities.

Conservation Grazing Mimics Natural Processes

Missouri's fertile soils and humid climate support prolific plant growth. Grasslands, whether introduced or native, that aren't managed periodically with fire, grazing, or some mechanical means become too thick and tall for use by most wildlife within just a few short years. Think about how tired you feel after hunting or hiking through thick, tall grass for a few hours. Now imagine trying to navigate a sea of tall grass as a thumb-sized quail chick, box turtle, or crawfish frog.

Historically, fire and grazing kept prairies free of tall trees and created a shifting mosaic of diverse habitat patches across the landscape. Bison and elk no longer roam Missouri's grasslands, but managers can use cattle to sculpt the habitat into short, tall, dense, and sparse patches that comprise a thriving grassland community.

Managers must focus and refocus grazing season-to-season and year-to-year in order to move these habitat patches across the landscape. They frequently use prescribed fire to focus grazing intensity. This approach, called patch-burn grazing, relies on the animals' preference for grazing fresh regrowth on recently burned sites. The result mimics the historic impact of native grazers on a much smaller scale. Managers also use temporary electric fences to concentrate grazing disturbance on overgrown sites. Regardless of the method, the aim is to shift grazing intensity across the landscape over time to avoid grazing the same area in the same manner year after year.

Matt Hill manages Wah'Kon-Tah Prairie as well as a number of other grasslands in and around St. Clair County. He says, "Of all the practices we depend on — prescribed fire, mowing, haying, spraying, and grazing — only the



Area managers use temporary electric fences to exclude cattle from streams and other potentially sensitive sites.

combination of fire and grazing meets our goal of providing diverse vegetative composition within a management unit because of its ability to provide a mosaic of varying height and thickness."

Matt emphasizes that bare ground with clumpy grasses and scattered wildflowers is perfect foraging habitat for turtles, young birds, and many small mammals. "We also use grazing to help control invasive plants," he says. "For instance, we use cattle to graze tall fescue short so that herbicide application is more effective in the fall. Grazing accomplishes the site preparation that would otherwise require many staff hours, hundreds of gallons of diesel fuel, and wear and tear on tractors and mowers."

Temporary Impact Fades Quickly, Increases Habitat Diversity

Not all plants and animals thrive under the same conditions. Conservation grazing creates patchy grasslands that provide homes for a greater variety of wildlife than grasslands managed as a single, uniform unit. So, in any given year, some parts of a grassland should remain ungrazed while other patches are grazed short, and still others are regrowing after past grazing. These regrowth areas host an array of annual and biennial plants that provide wildlife food in the form of seeds, nectar, pollen, and insects. Such patches are often under-represented in today's grasslands, yet they may be among the most beneficial to wildlife. Under conservation grazing, the grasses and other perennial plants regrow and evidence of grazing fades.



Why Cattle Instead of Bison?

Some people ask why we graze with cattle instead of bison. There are subtle differences in the habits of bison and cattle: bison eat slightly more grass than cattle. They also spend less time in shade and travel farther from water. However, these differences are minimal on Missouri's relatively small grasslands. Managing bison would require more elaborate fencing, year-round staff time, and would complicate public-use opportunities. Privately owned cattle are removed from Department areas at the end of the planned grazing season, which provides more flexibility in grazing management than if bison were present year-round.

Grazing Plans are Specific and Adaptive

Before stocking cattle on an area, managers prepare written grazing plans that define the location and timing of prescribed burns, the location of temporary fences, the type and number of grazing animals to be stocked, and the duration of grazing needed to accomplish habitat objectives. These plans are site-specific and adaptive. They vary from site to site and change for each site over time. This approach is responsive to changing grassland conditions and is preferable to simplistic cookie-cutter plans that can cause grasslands to become increasingly uniform.

Conservation grazing is implemented to benefit grasslands and restore cycles of disturbance and regrowth that strengthen the natural community. Managers choose the number of cattle stocked and the duration of grazing on Department areas to meet specific habitat objectives, not livestock performance or economic considerations. Once the livestock have accomplished their grassland management work, they are returned to privately owned land in time for some regrowth to occur before winter.

Conservation Grazing Benefits Wildlife

Managers and ecologists still have much to learn about how grazing affects individual species, but available data and theory suggest that grazing benefits grasslands and a wide range of wildlife species that depend on them.



Mating pair of regal fritillaries

Managers consider results from Missouri-based grazing studies, as well as relevant results of research conducted in nearby states, when deciding how to implement conservation grazing.

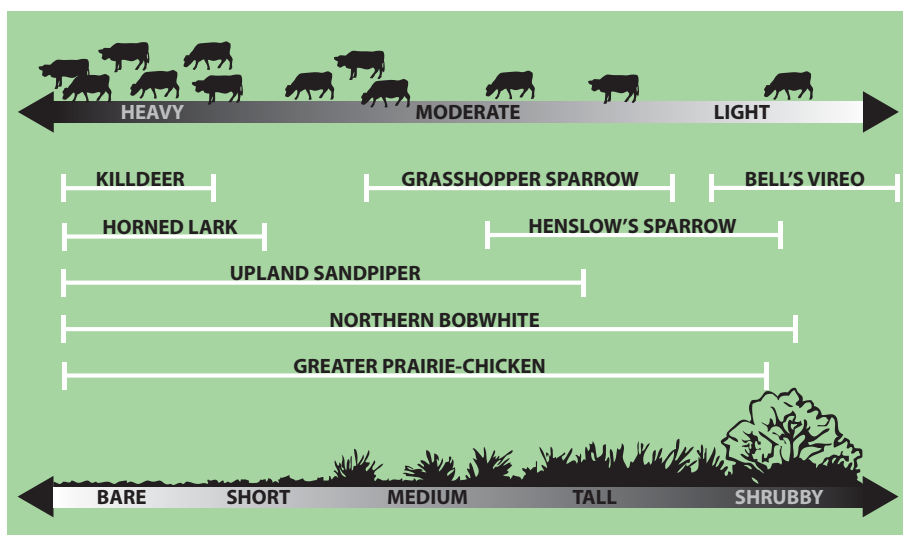
Invertebrates

The sheer diversity of insects and arthropods is mindboggling. As a result, there is no easy way to broadly categorize insect response to grazing or other management.

A study conducted near Stillwater, Oklahoma, found that grassland patches managed with fire and grazing produce about 50 percent more invertebrates, by weight, than do grasslands managed to be more uniform in appearance. Patchy pastures also held a wider variety

of invertebrates than did the more uniform pastures. Managing habitat that meets the needs of a broad range of invertebrates can mean similar benefits to other members of the food web, including humans. This is because many of these invertebrates help pollinate crops that feed us.

Other studies have found that prior land use, such as tillage or the use of herbicide, can have lasting consequences that outweigh the effects of current management. A study in the Grand River Grasslands of northwest Missouri found that land-use history had a stronger influence on butterfly, ant, and leaf beetle community composition than current fire and grazing management. Efforts to conserve native insect communities may need to begin with native plant restoration.



Wildlife Need a Full Range of Grassland Habitats to Thrive

This graphic depicts the relationships of several birds to habitat patches created by varying levels of grazing intensity with the horizontal bar spanning the multiple cover types that each species requires. It's easy to see that maintaining a uniformly average grassland fails to meet the needs of many species.



Bobwhite quail

Grassland wildlife benefit from the variety of habitat patches that conservation grazing creates.

Birds

Grassland birds are the most rapidly declining bird group in North America. Proper grazing can maintain heavy cover needed for nesting and protection from the weather while creating areas of short grass interspersed with taller wildflowers needed for brood-rearing. More importantly, grazing can provide these patches within easy walking distance for newly hatched chicks. Greater prairie-chickens, upland sandpipers, bobwhite quail, and others benefit from the variety and arrangement of habitat patches that conservative grazing creates.

Reptiles and Amphibians

More study is needed to understand how grazing affects reptiles and amphibians. However, findings from a study on Osage Prairie Conservation Area near Nevada support the idea that these animals use the diverse habitat patch types created with fire and grazing.

Small Mammals

An Oklahoma study found that different kinds of small mammals select habitat based on the amount of plant litter covering the ground. For example, hispid cotton rats, prairie voles, and harvest mice chose patches with the most litter. Hispid pocket mice tend to favor areas with a medium amount of plant litter, and deer mice are more abundant in areas with little plant litter. Grasslands that provide patches with varying amounts of litter meet the needs of a wider diversity of rodents, thereby providing a more diverse food base to their predators.



Ornate box turtle



Deer mouse

Grazing Diversifies Grass Plantings

Many grasslands on conservation areas were managed as crop fields or fescue pastures by previous landowners. Department staff have planted some of these fields to diverse mixes of grasses and wildflowers harvested from local native prairies. On others, they established commercially available native grass cultivars and legumes. Increasingly, public land managers agree that many of these grasslands are out of balance because grasses have out-competed broadleaved plants to an extent that



Conservation grazing creates the mixed grassland habitat ground-nesting birds need.

Conservation Grazing on Native Prairie

Grasslands on some Department-owned areas are native prairies, which, by definition, have never been plowed. These diverse prairies are exceptionally rare communities — less than one-half of 1 percent of Missouri’s historic native prairie remains. These special places provide a glimpse of what one-third of Missouri may have looked like before European settlement.

Grasses can also grow to dominate native prairie. Many types of wildlife benefit when prairie is carefully grazed. Grazing also gives plants that may have labored under the shadow of tall grasses renewed access to sunlight, and may aid in the germination of some seeds. Native prairie evolved under the complementary processes of fire and grazing, so it makes sense that it remains resilient to some level of grazing today.

More information about how grazing may affect long-lived perennial plants is needed. There is evidence to suggest that some prairie plants may decline under grazing management that fails to provide a sufficient rest period from grazing. However, no studies have focused on how populations of individual species change under conservation grazing management, which does include periods of rest.

An initial Department study of the plant community on five patch-burn grazed prairies showed no detectable

diminishes habitat benefits. Conservation grazing is proving to be an effective, cost-efficient means of temporarily suppressing dominant grasses and creating a more open habitat structure so a wider variety of plants — and animals — can thrive.

A prime example of the benefits of grazing may be found at the Robert E. Talbot Conservation Area in Lawrence County. One of the older plantings there had become “grassed-in,” with limited plant diversity and a problem with the invasive exotic plant sericea lespedeza. Patch-burn grazing was implemented in 2011. Since then, grassland bird diversity has increased and bobwhites now regularly choose the site to nest and rear their chicks. In fact, radio telemetry has shown that quail prefer grazed areas over all other available habitats on the area. Grass dominance has decreased, and native wildflower diversity has increased. Sericea lespedeza has become a less-serious problem because grazing promotes more effective control of this weed with less herbicide. Essentially, the reintroduction of the natural processes of fire and grazing helped transform what had become a stagnant planting into a more vigorous and complex plant community that requires less staff time and money to maintain.

Conservation Grazing Help is Available

The Department works with farmers and landowners across the state to help them improve wildlife habitat via well-planned prescribed fire and grazing management. The intent is to help them support wildlife and conserve natural resources while maintaining or even improving grazing enterprise profitability. See Page 3 for regional office phone numbers.

Downy gentian



**“Of all the practices we depend on,
only the combination of fire
and grazing meets our goal
of providing diverse vegetative
composition within a management unit.”**
—Matt Hill, Wah’Kon-Tah Prairie area manager



shift in plant composition after a three-year grazing rotation. A longer-term study aimed at learning how some prairie plant species’ populations change under patch-burn grazing is underway. In addition to shedding light on changes in prairie plant diversity, this study will also provide a better understanding of how grazing changes the vegetation structure among habitat patches. Although slated to run through 2029, Department scientists and land managers will review incoming data from these studies at five-year intervals to guide decisions about where and how to implement grazing.

Value of a Long-Term Perspective

Some visitors to our areas don’t find recently grazed areas particularly pretty — they can look a bit thin and scruffy in the short-term. But you can’t fairly judge a grassland’s health by the look of a recently grazed patch any more than you can judge a wetland’s health as floodwaters

The rising sun over Wah’Kon-Tah Prairie highlights the patchwork of habitats area managers create using fire, grazing, and other practices.

begin to recede. When viewed from a long-term perspective, we can begin to see the temporary impacts of grazing as a natural phase in the life cycle of a healthy grassland community. Be sure to visit the Department’s grazed grasslands often to witness these changes firsthand and take in the area’s beauty as it is remade again and again. ▲

Max Alleger, the Department’s grassland coordinator, helps staff and partners find ways to meet the needs of the people and wildlife that share Missouri’s grasslands. He enjoys time afield with his son, Ben.



HAPPY *Campers*

A FAMILY CAMPING

TRADITION THAT SPANS THE AGES

DAVID STONNER



BY PEG CRAFT AND HEATHER FEELER

If the Newenhaus family had a motto, it would be the family that camps together stays together.

For more than 60 years, the family has gathered beneath the oaks and pines along Huzzah Creek in the Ozarks to camp, hike, fish, float, and watch wildlife. It is a closeness fostered by time together and the slower pace of outdoor living. While the family has grown dramatically through the decades, the time together exploring the outdoors has been the common thread shaping their lives.

AND SO IT BEGINS

In 1950, Ted and Ardella Newenhaus, who lived in St. Louis, were looking for a place to take their growing family on vacation on a very tight budget. Ted's colleague suggested one of his favorite camping spots in the Ozarks, just a few hours from their home. With borrowed camping gear and a heart for adventure, the family set out to one of the most scenic and biologically diverse areas in Missouri — Huzzah Creek.

Located in the Ozarks, Huzzah Creek runs through Huzzah



The nine Newenhaus kids learned early to share and keep a clean campground.



The Huzzah Creek was like nature's air conditioning in the dog days of summer.



Fishing for bass and bluegill was a favorite activity.



Girl Scout Leader Ardella takes her troop on a hike to the bluff.



PHOTOGRAPHS COURTESY THE NEWENHAUS FAMILY

Conservation Area, which has 6,225 acres of rugged forest terrain to explore, including fishing and floating opportunities on the Meramec River and Huzzah and Courtois creeks. The Ozark Trail, which covers more than 350 miles of conservation areas, state parks, and national forests in Missouri, goes across Huzzah, allowing hikers up-close access to many of the conservation areas' unique features. There are also more species of crayfish than anywhere else in Missouri. It is a camper's paradise.

Huzzah was an instant hit for the Newenhaus family. On their first camping trip, the family cooled off in the crystal cool waters of the Huzzah Creek, delighted to find an abundance of crayfish and salamanders.

It was the first of many family hikes to the bluff to see wildflowers and birds among the oaks and shortleaf pines. It was a haven for wildlife they never had the opportunity to see in the city. It also became the family's camping spot year after year.

"All my best childhood memories are from camping with my family," said Mary, one of the eight daughters in the family. "My claim to fame is that I've never missed a trip."

TO THE FUTURE

It's a little easier for Mary to make the trip these days. After meeting her husband in the area, they built a cabin with a scenic overlook of the Huzzah Valley. It's a breathtaking view she loves no matter what the Missouri season.

"We get a perfect view of the sunrise and the full moon," Mary said. "For Missouri, I don't think it gets any better than our view here." Watch a four season timelapse video of the Huzzah Valley at bit.ly/23fY3m0.

But Mary's not the only Newenhaus family member to make the Ozark landscape home after years of camping there. Her sister, Annie, and her husband loved camping so much they decided to move to the country to be around nature every day, while her brother, TJ, camps all year round and is hoping for a second career as a campground host.

"I am the youngest, so I've been coming here since I was born. Now I bring my kids and grandkids," said TJ proudly. "I've



The outdoor traditions are passed along early in the Newenhaus family.

camped all over the country, but this is my favorite place. Missouri has everything — creeks and rivers and lakes and mountains. I think camping would be good for anybody to take up if they haven't tried it before. It's very inexpensive compared to hotels."

TJ and his young grandson, Jeremiah, like to spend a lot of time fishing and watching for wildlife by the creek.

"I see bluegills, sunfish, and bass," said Jeremiah. "I usually bring my goggles down to the creek and swim under, and there are a lot of crawdads and tadpoles, too. It's like an outdoor aquarium."



Young Dude serenades his great-grandmother at the campsite.



**Ardella and Ted
atop an Ozark bluff.
This was Ted's last
hike at the age of 80.**

NEVER FORGET

While TJ continues to nurture the love of nature with the younger generation, he remembers fondly the start of the camping tradition with his mom and dad. It's a legacy he remembers daily.

"My dad, who started our camping trips, is no longer with us, but he hiked up the bluff for the last time when he was around 80 years old. I have a picture of that and it's the first thing I see when I walk in the door to my house," said TJ.

Even with Ted's passing, the entire family, including the nine children, 26 grandchildren, 15 great grandchildren, and matriarch Ardella, continues to camp at Huzzah each year as one big happy family. They all have their unique roles for the camping reunions, including camp setup, cooking, and clean up. The Newenhaus family also enjoys their nightly campfire time with music and games.

"We play a game called 'Remember When' where we tell a memory, and you can bet 90 percent of the memories are from camping," said sister Laurie.

The Newenhaus family would tell you it's never too late to start an outdoor camping tradition. Missouri has some great scenic places to get you started, but Huzzah will always be their favorite. The Ozark wilderness inspired them from the very beginning and continues to bring them closer together to this day. See the Newenhaus family story at bit.ly/25XCHJ5. ▲

Peg Craft is a digital media producer with the Department and enjoys floating Ozark streams with her children. Heather Feeler, communications manager with the Department, loves exploring the Missouri's outdoors, including hiking and fishing with her young sons.

CAMPING 101

Camping with your family may seem like a daunting adventure, especially if you've never slept all night under the stars. However, camping can be a very affordable and fun family outing. Missouri offers some incredibly scenic places to pitch your tent and freely explore the outdoors. With more than 1,000 conservation areas across the state, your camping destination may be closer than you think.

»» Where to Camp ««

The first step in getting ready for a camping excursion is to determine a camping location. Family and friends may offer sound advice on some top camping spots, especially if they are big campers. Never discount firsthand experience when it comes to outdoor hotspots.

If you don't have any word-of-mouth recommendations, the Department's website can point you in the right direction: on.mo.gov/155l6Yx. You can search for conservation areas close to you, by activity, or even by natural area. Each conservation area listing on the website details things to do on the area, such as camping or hiking, as well as what habitat and wildlife you might see around you.

Each area of the state offers a different landscape to enjoy. You might camp up north and take in the beauty of a prairie sunrise or go down to the Ozarks to enjoy the majestic forests. There are streams and rivers, lakes and ponds, and large wetland areas — all great spots to enjoy the water and wildlife. Hikers may also choose a camping spot by scenic trails that meander up hillsides for a spectacular view that takes your breath away — both from the beautiful view and being winded by the walk. There are lots of unique outdoor spots all across Missouri perfect for an overnight stay.



»» What to Bring ««

Once a camping location has been scouted and selected, you're ready to start thinking about packing for your trip. Don't get overwhelmed by the camping supply list. Just like the Newenhaus family, you can start your first camping trip by borrowing the basics, such as a tent or sleeping bags, from friends or family. You can also cook your food on an open fire at the campsite versus bringing a camping stove. It's up to you how heavy or light you want to pack.

It's important to be prepared on your outdoor adventure. Developing a checklist is helpful. The length and location of your trip may dictate your list. Here's a sample list to get you started:

✓ Shelter

Tent, ground tarp, stakes, and a hammer or ax to get stakes in the ground

✓ Bedding

Sleeping bag, extra blankets, pillow, mat or pad for under your sleeping bag (or an air mattress and air pump, if you want to be really comfy)

✓ Cooking

Cooler, large water jug or water bucket, matches/lighter, stove with fuel or campfire grill, fire starter, aluminum foil, ziplock bags, paper towels, plates and silverware, trash bags, dish soap, cooking pot, tongs, can opener, cutting board, knife, seasonings, and condiments

✓ Clothes

Comfortable clothes, hiking shoes/boots, extra socks, hat, bandana, sweatshirt/jacket, rain gear, swim suit, towel

✓ Miscellaneous

Sunscreen, lip balm, lantern or flashlight, extra batteries, compass/GPS, bug spray, water filters/purification, camp chairs, hammock, first aid kit, rope, conservation area map, fishing pole, fishing license, binoculars, handwipes, nature journal, tote bag

If you decide to start a cozy fire at your campsite, buy firewood where you camp and burn it all before you leave. When preparing your fire, clear a generous zone around your fire ring and store any unused firewood a good distance from the fire. Keep fire-extinguishing materials, such as a rake, shovel, and bucket of water, close so you can quench your fire in a hurry. Extinguish campfires each night and before leaving camp. These tips can help avoid a dangerous forest fire at a campsite.



»» Family Activities ««

The pace of your life can slow down tremendously during a family campout. Take the time to enjoy the fresh air and the company around you. Fun family activities might include:

- ▲ Listening to the nature sounds around you — bird calls, running water, trees in the wind
- ▲ Finding a trail and hiking it to the very end
- ▲ Exploring a creek or pond for crayfish, frogs, and turtles
- ▲ Bird watching with your brand new binoculars
- ▲ Hanging in a hammock amongst the trees
- ▲ Breaking out your fishing pole to catch some fish for dinner
- ▲ Floating or canoeing down the river
- ▲ Taking a nap in the grass or in your tent
- ▲ Skipping rocks in the water
- ▲ Scouting for animal tracks in the dirt or mud
- ▲ Swimming all day
- ▲ Telling funny jokes and stories around the campfire



»» Want to Learn More? ««

You're now ready for your first camping trip. You know where to camp, what to bring, and fun activities when you get there. However, if you're an overachiever and want to learn new outdoor skills before you go, the Department offers free programs to help you build that knowledge. Classes are offered in birding, camping, canoeing, Dutch-oven cooking, fishing, fire building, hiking, map and compass, outdoor survival, and much more. Go to mdc.mo.gov/events to find an outdoor skills class near you.

Spiderwort

MISSOURI'S PRAIRIES ARE unique places to view wildlife, beautiful blooms, and sweeping landscapes. The 1,680-acre Taberville Prairie Conservation Area, just north of El Dorado Springs in St. Clair County, is made up almost entirely of the Taberville Prairie Natural Area. At 1,360 acres, it's the largest prairie natural area in the state and is a registered National Natural Landmark. It's a remnant of the prairie ecosystem that once covered a large part of Missouri and is home to plants and animals that are specifically adapted for life on the prairie. I've seen shrikes impale grasshoppers on barbed wire spikes. I've seen a bobcat trot along an access road, darting into cover then back out in the open, reluctant to get his feet wet in the dewy grass before sunrise. I've seen scissortail flycatchers perched on fences, big bucks bounding across the prairie horizon, and groups of prairie chickens flush and scatter in a whirl of feathers at the sound of my approach. Taberville Prairie is a real gem.

While on a hike looking for wildflowers, I came across a big bunch of spiderwort, one of my favorite native plants. It's planted around my house, and my family enjoys the vibrant blooms in spring and early summer. I naturally focused in on a clump of Ohio Spiderwort (*Tradescantia ohiensis*) and began to photograph different compositions.

While using a 16–35mm f/2.8 wide-angle lens to capture photographs of the prairie vista, an immature bush katydid and syrphid fly converged on the same plant. The sense of movement and life they brought to the flowers added a different dimension to the photos. I tried a 100mm macro lens, a typical choice for close-ups of tiny critters, but the resulting pictures lost their sense of place and looked as if they could have been taken anywhere. Switching back to the wide-angle lens and getting very close allowed the focal point to remain on the flower while the background of grass and sky kept the feel of the open prairie.

Spiderwort is not a self-pollinating flower, and has to rely on long-tongued bees to reproduce. The flowers open up during the morning and close by afternoon in sunny weather, allowing pollen to be transferred from the male flower part (anther) to the female flower part (stamen). I asked Max Alleger, a Department grassland coordinator, if either the katydid or the fly could pollinate the flowers. (See Max's *Grazing for Conservation* story on Page 10.) He said the syrphid fly on the right side of the photo appears bee-like and is a good mimic, but isn't actually a bee at all and feeds on stray pollen. The katydid nymph (*Scudderia*) is herbivorous and any pollination on its part would also be accidental as it moves around the prairie.

Summer is a great time to visit the varied ecosystems of Missouri's prairies.

—Story and photograph by David Stonner

📷 16–35mm lens • f/11 • 1/200 sec • ISO 100

We help people discover nature through our online Field Guide. Visit on.mo.gov/1M3cWgI to learn more about Missouri's plants and animals.





Mark Youngdahl Urban Conservation Area

This 85-acre area in St. Joseph offers multi-use trails, bird watching, native grasses, wildflowers, and various tree plantings — all within the city limits.

THIS BUCHANAN COUNTY area is located in the middle of St. Joseph and offers a wide variety of outdoor activities to enjoy in May. These 85 acres of gently rolling land offer good opportunities to view wildlife, which can include songbirds, quail, rabbit, raccoon, fox, and even deer.

The 2 miles of foot trails accommodate a wide range of users from exercisers, hikers, bikers, and those with disabilities. The three-quarter-mile Ridge Trail and two-third-mile Pond Trail are asphalt-surfaced and accessible to wheelchairs. All trails offer good views of the area and surrounding city. While bicycles are allowed on the area trails, they must yield to pedestrians. This urban area also offers a place for many visitors to walk their pets, which are welcome as long as they are kept on a leash and their droppings picked up. Trash cans and even a doggy cleanup station are provided, thanks to the local Friends of the St. Joseph Animal Shelter.

Remember to bring binoculars to view wildlife like songbirds, waterfowl, frogs, and turtles that frequent the area's 2-acre marsh and fishless seasonal wildlife watering holes. Birds found throughout the area include eastern kingbirds, different types of warblers, orioles, woodpeckers, and various waterfowl.

The warm-season grass and wildflower plantings on the area offer an opportunity to experience what early settlers may have seen as they passed through the area's loess-hill landscape. A variety of native wildflowers can be seen in full bloom on these grasslands from mid-spring to late summer. Many types of pollinators, including



70–200mm lens • f/3.5 • 1/500 sec • ISO 400 | by David Stonner

butterflies, bees, and other insects frequent these plantings, providing opportunities for wildlife photography of many different species.

The area was named after Mark Youngdahl, a Missouri State Representative from 1970 to 1990. Mr. Youngdahl was very active in St. Joseph and was instrumental in the Missouri Department of Conservation's purchase of the land so the city's residents and visitors could enjoy nature inside the city limits.

The area's main parking lot is located off 36th Street and has ample parking for cars or buses. The area's privies, water fountain, and picnic pavilion are all located within close proximity. A second, smaller parking lot is located just off 32nd Street and offers good access to the area's second pavilion. Both offer picnic tables and above ground barbecues and can be used on a first-come, first-served basis.

—Lonnie Messbarger, area manager



Mark Youngdahl Urban Conservation Area

Recreation Opportunities: Wildlife viewing, bird watching, outdoor photography, hiking, bicycling

Unique Features: Native grassland, woodland, forest, small wetland, fishless wildlife watering holes

For More Information: Call 816-271-3100 or visit mdc.mo.gov/a8330



IDEAS FOR FAMILY FUN

MDC DISCOVER nature

To find more events near you, call your regional office (phone numbers on Page 3), or visit mdc.mo.gov and choose your region.

DISCOVER NATURE — FAMILIES: FREE SHOOTING DAY

MAY 8 • SUNDAY • 12–4:30 P.M.

Southwest Region, Andy Dalton Shooting Range and Outdoor Education Center, 4895 N. Farm Road 61, Ash Grove, MO 65604

No registration required, call 417-742-4361 or email daltonrange@mdc.mo.gov for more information

All ages, families

In honor of all mothers on their special day, enjoy one free hour of rifle shooting or round of trap or skeet shooting on us.

FAMILY FISHING DAY

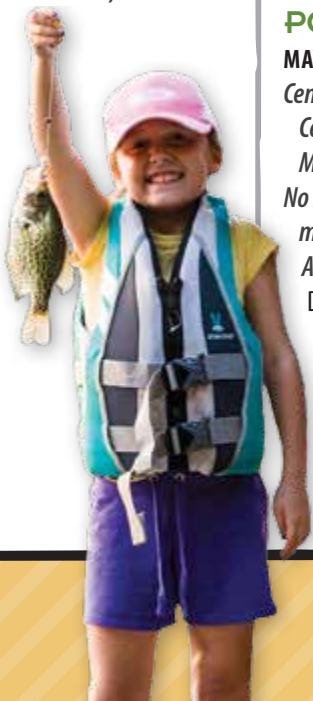
MAY 21 • SATURDAY • 10 A.M.–2 P.M.

Ozark Region, Twin Pines Conservation Education Center, RT 1 Box 1998, Winona, MO 65588

No registration required, call 573-324-1381 for more information

All ages

Join us for free fishing, a fishing contest, lunch, games, prizes, and more.



THE AMERICAN BUFFALO: BEAST OF THE PRAIRIE

MAY 21 • SATURDAY • 10 A.M.–2:30 P.M.

Kansas City Region, Anita B. Gorman Conservation Discovery Center, 4750 Troost Ave., Kansas City, MO 64110

No registration required, call 816-759-7300 for more information

All ages

"Tatanka," "pezhekee," and "iinii" were just a few names that Native Americans called the American buffalo or bison. No matter what name you call them, the largest mammal of the prairies is the defining symbol of these wild lands. Come explore the world of the bison and learn about its past, present, and future.

WHAT'S GOING ON? POND LIFE

MAY 21 • SATURDAY • 10 A.M.–2 P.M.

Central Region, Runge Conservation Nature Center, 330 Commerce Drive, Jefferson City, MO 65102

No registration required, call 573-526-5544 for more information

All ages, families

Discover life under, on, and around a pond. Join us in the watery world with indoor and outdoor pond activities. Aquatic nets will be available to check out for pond scooping. Let's go outside and discover nature.

CONSERVATION KEEPERS: INTRO TO FISHING/ FISHING AT THE POND

MAY 21 • SATURDAY • 1–2 P.M.

Northeast Region, Northeast Regional Office, 3500 S. Baltimore Street, Kirksville, MO 63501

No registration required, call 660-785-2420 or email alyssa.redding@mdc.mo.gov for more information

All ages, children accompanied by an adult

Let's go fishing! We will have a short presentation about the different local fish species, then we will go out to the pond and learn how to bait a hook and cast a line.

VOLUNTEER OPEN HOUSE

MAY 21 • SATURDAY • 1–3 P.M.

Southeast Region, Cape Girardeau Conservation Nature Center, 2289 County Park Drive, Cape Girardeau, MO 63701

No registration required, call 573-290-5218 for more information

Ages 14 and older

Volunteering at the Nature Center is fun, educational, and rewarding. Stop by the open house and see what it is all about and how you can become part of the team. This opportunity may be just what you are looking for.

BLUE MOON

MAY 21 • SATURDAY • 7:30–9 P.M.

St. Louis Region, Columbia Bottom Conservation Area, 801 Strodtman Rd., St. Louis, MO 63138

Registration required, call 314-877-6014 beginning May 4

All ages, families

How can there be a blue moon in the middle of the month? We'll discuss this as we walk and view both the sunset over the prairie and the moonrise over the Mississippi River.



Subscribe online • on.mo.gov/1E6osBA • Free to Missouri households



I Am Conservation

The Missouri Department of Conservation assists teachers and schools across the state with outdoor education materials, support, and opportunities. In 2014, Brian Flowers, outdoors skills specialist with the Department, helped secure a grant from the Missouri Conservation Heritage Foundation to purchase over \$10,000 worth of equipment for outdoor education programs in the Columbia School District. Teachers Mason Mershon (left) of Hickman High School, Jon Mize (middle), formerly of Battle High School, and Jeff Bazat of Rock Bridge High School used the equipment to teach a variety of outdoor education courses in their schools, including the Missouri National Archery in the Schools Program, hunter education, fishing, shooting sports, camping, backpacking, and more. "With the help of the Department, we have lots of resources and equipment to demonstrate, and the students can engage in activities that enhance their awareness of the wilderness," said Bazat. "Each semester our students get the opportunity to fish at Bethel Lake. The Department made sure to enhance our students' experience by donating a rod for each student in the class." The teachers said students are excited and enriched by the opportunities presented through the outdoor skills curriculum. "Brian Flowers has helped make our outdoor education classes successful at all three high schools," said Mershon. "These Columbia teachers have been instrumental in mentoring their students in the outdoors," said Flowers. "They've passed on an appreciation of our natural resources and a love of outdoor recreation." —*photograph by Noppadol Paothong*